



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,350	07/21/2003	Sascha Kreiskott	S-99,952	9406

35068 7590 11/21/2006

LOS ALAMOS NATIONAL SECURITY, LLC
LOS ALAMOS NATIONAL LABORATORY
PPO. BOX 1663, LC/IP, MS A187
LOS ALAMOS, NM 87545

EXAMINER

SMITH, NICHOLAS A

ART UNIT	PAPER NUMBER
----------	--------------

1742

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/624,350

Applicant(s)

KREISKOTT ET AL.

Examiner

Nicholas A. Smith

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 and 7-19 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1 and 3-5 and 7-13 remain for examination. Claims 14-19 have been withdrawn from consideration.

Claim Objections

2. In view of applicant's remarks submitted 9/18/2006 on p. 5, the previous objection to the claims has been withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-5, 7-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiao (provisional application 60/483956 of US2005/0000826) in view of Datta et al. (US Patent 6,228,246) and Rosswag (US Patent 4,372,831) for the same reasons as stated in the previous office action on p. 3.
5. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiao in view of Datta et al. and Rosswag as applied above to claim 1, and further in view of Drummond et al. (US Patent 2,330,562) for the same reasons as stated in the previous office action on pp. 3-4.
6. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiao in view of Datta et al. and Rosswag and further in view of Drummond as applied

Art Unit: 1742

above to claim 9, and further in view Tezuka et al. (US Patent 5,843,290) for the same reasons as stated in the previous office action on pp. 4-5.

7. Claims 1, 3-5, 7-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arendt et al. (US 2003/0144150) for the same reasons as stated in the previous office action on pp. 5-7.

8. Claims 1, 3-4, 7-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arendt et al. (US 2003/0036483) in view of Rosswag for the same reasons as stated in the previous office action on pp. 7-9.

9. Claims 1, 3-5, 7-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glowacki et al. (Texture development in long lengths of NiFe tapes for superconducting coated conductor) in view of Rosswag for the same reasons as stated in the previous office action on pp. 9-11.

10. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glowacki et al. in view of Rosswag as applied to claim 1 above, and further in view of Drummond et al. (US Patent 2,330,562) for the same reasons as stated in the previous office action on pp. 12-13.

11. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glowacki et al. in view of Rosswag and further in view of Drummond as applied to claim 9 above, and further in view of Tezuka et al. (US Patent 5,843,290) for the same reasons as stated in the previous office action on pp. 13.

Response to Arguments

12. Applicant's arguments filed 9/18/2006 have been fully considered but they are not persuasive.

13. Applicant states that the present invention was completed prior to the date of publication in April 10, 2003 as evidenced by the published reference in the *Journal of Superconductor Science and Technology*. However, the Examiner asserts that the evidence provided is not commensurate with the scope of the invention.

14. The declaration under 37 CFR 1.132 filed 9/18/2006 is insufficient to overcome the rejection of claims 1, 3-5, 7-8 and 13 based upon Qiao in view of Datta et al. and Rosswag, the rejection of claims 9 and 12 based upon Qiao in view of Datta et al. and Rosswag and further in view of Drummond et al., the rejection of claims 10-11 based upon Qiao in view of Datta et al. and Rosswag and further in view of Tekuza et al., and the rejection of claims 1, 3-5, 7-8 and 13 based upon Arendt et al. '150 as set forth in the last Office action.

15. The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Qiao reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthalerv. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897).

16. The Examiner asserts that the scope of the declaration is not commensurate with the scope of the claim although agrees with Applicant in part.

17. First, although the declaration describes electropolishing a metallic tape having an initial roughness of 20 nm, the declaration does not provide evidence of conception for electropolishing metallic tape having an "initial roughness of more than 10 nm in claim 1, which would include surfaces with roughness orders of magnitude higher. Conclusion statements, such as that in declaration (9/18/2006, p. 2, paragraph 5, section b) are not enough to signify support for open-ended claim language.

18. Second, although the declaration describes applying current densities of 0.17 A/cm² and 0.37 A/cm², the declaration does not provide evidence of conception for applying current densities of "at least 0.18 A/cm²" and "at least 0.37 A/cm²" in claims 1 and 3, which would include current densities orders of magnitude higher. Conclusion statements, such as that in declaration (9/18/2006, p. 2, paragraph 6, section c) are not enough to signify support for open-ended claim language.

19. Third, Examiner now agrees that declaration provides evidence to support that the declaration describes evidence of conception for reducing the roughness to less than about 4 nm in claim 1 or to less than about 0.5 nm in claims 3-4. See declaration (1/17/2006, p. 7, abstract) wherein the process is described to provide roughness below 1 nm; this is evidence of conception of roughness to less than about 1 nm in claims 3-4. See declaration (1/17/2006, p. 8, section 2, paragraph 2) wherein an experimental range of surface current densities are given; endpoints of that given range correspond to specific embodiments described to have RMS of 4nm and 0.5 nm (1/17/2006, p. 8,

Art Unit: 1742

section 3, paragraphs 2-3) and therefore this is evidence of conception of roughness to less than about 4 nm.

20. Fourth, the declaration does not provide evidence of conception for an anode that includes a metal selected from the group consisting of titanium, niobium, tantalum, platinum, rhenium, rhodium, nickel, chromium, gold and silver. Applicant only discloses a gold-plated electrode (1/17/2006, p. 8, section 2, paragraph 1).

21. In response to applicant's argument that Arendt et al. '483 does not inherently teach the claimed invention of electropolishing to reduce the roughness of the metallic tape to less than about 4 nm, Examiner refers to Arendt et al. '483, paragraphs [0015]-[0016]. Arendt et al. discloses starting a metal tape with a rough surface (paragraph [0015], line 12). The active process is selected from a group of alternative processes, mechanically polished, electrochemically polished or chemically mechanically polished (paragraph [0015], lines 11-15). The end effect of such a process is to provide a smooth surface (paragraph [0015], lines 11-15). Arendt et al. further defines a rough surface as having RMS roughness of 15 nm to 100 nm or greater (paragraph [0016], lines 12-14). Arendt et al. further defines a smooth surface as having RMS roughness of less than about 2 nm, preferably less than about 1 nm (paragraph [0016], lines 19-21). Therefore, the claimed elements are taught by Arendt et al.

22. In response to applicant's argument that Glowacki et al. does not provide a specific embodiment near the claimed range, Examiner reminds applicant that Glowacki et al. is not limited to such a specific embodiment. The method of Glowacki et al. in view of Rosswag meets the claimed limitation for the same reasons as stated in the

previous office action on pp. 9-11. In response to applicant's argument that Glowacki et al. in view of Rosswag does not suggest the claimed ranges of final RMS roughness, Examiner maintains assertion that a "mirror gloss finish" would inherently have a reduced RMS roughness of less than about 4 nm or 0.5 nm. Please see applicant's admission that a mirror gloss finish of 10 nm RMS or less (remarks, 9/18/2006, p. 13), Ueno et al. (US 2003/0209185), paragraph [0053], or Tsai et al. (US Patent 5,922,091), col. 2, lines 40-44 and Figure 1.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

24. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

Art Unit: 1742

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS

ROY KING 
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700